

CETPA INFOTECH PVT. LTD.
CURRICULUM OF JULIA PROGRAMMING

➤ **Basic Concepts in Julia programming language**

- Introduction to Julia language
- History of Julia language
- Why to Learn Julia Programming Language?
- Datatypes in Julia language
- Operators in Julia language
- Introduction to loops
- Introduction to Conditions
- Mathematical Operators in Julia
 - Arithmetic Operators
 - Bitwise operators
 - Numeric Comparisons
 - Operator Precedence
 - Numeric Conversions
- Strings in Julia
 - String basics
 - Interpolation
 - Triple quoted String literals
 - Non Standard String Literals
 - Regular Expressions
 - Raw String Literals

➤ **Intermediate Concepts of Julia Programming Language**

- Introduction to Arrays
 - Basic Functions
 - Indexing and Assignment
 - SubArrays
 - Concatenating Arrays
- Multidimensional Arrays in Julia
- Dictionaries in Julia
- Introduction to Matrices
- Date and Time in Julia
- Scopes of variables in Julia
 - Global Scope
 - Local Scope
 - Constants
- Introduction to Sparse matrix
- Input/Output Operations using Julia
- Constructors in Julia
 - Outer Constructor
 - Inner Constructor
 - Parametric Constructor

➤ **Advance Concepts in Julia Programming Language**

- Functions in Julia
 - Argument Passing Behavior
 - The return keyword
 - Anonymous Functions
 - Multiple Returned Values
 - Optional Arguments
- Modules in Julia
- Interfaces in Julia
 - Iteration
 - Indexing
 - Abstract Arrays
- Working with Packages in Julia
- Various operations on different datatypes using Julia
- Reading and Writing files using Julia
- Introduction to DataFrames in Julia
- Dealing with missing values
- Recursion in Julia
- Closure in Julia
- Currying in Julia
- MapReduce in Julia

➤ **Higher Level Programming Concepts with Julia**

- Meta Programming
 - Expression and Evaluation
 - Macros
 - Expression and Evaluation
- Parallel Computing
 - Channels
 - Data Movement
 - Shared Arrays
 - Parallel Map and Loops
- Running External Programs
 - Interpolation
 - Quoting
 - Pipelines
- Workflow Tips

➤ **Data Visualization using Julia**

- Scatter Plot in Julia

- Multidimensional Scatter Plot in Julia
- Histogram in Julia
- Bar Graphs in Julia
- Boxplot in Julia
- Trigonometric Plots in Julia
- Customizing the graphs with Julia
- Whiskers graph in Julia
- Line Graphs in Julia
- Pie Chart using Julia
- Sub Graph Plotting in Julia
- Funnel Chart with Julia
- Relative Frequency Histogram
- Segmented Bar Graph
- Notebook in Julia